REMARKS

The drawings are amended. No new matter is added

The specification is amended. No new matter is added.

Claims 1-12 are in the application.

Claims 10-12 are withdrawn from consideration.

Claim 3 is cancelled without prejudice or disclaimer.

Claims 1, 5 and 7-9 are amended. No new matter is included.

I. Oath

The assertion by the Examiner that the Oath or declaration is defective is noted. A corrected declaration has been prepared, and is included with this response (following the drawing replacement sheets).

II. Drawings Objection

The objection to the drawings because the features 106 and 110 do not appear in the description is traversed. The Examiner's attention is directed to the two paragraphs on page 6, beginning on lines 6 and 18. In each paragraph, reference numerals 106 and 110 are positively recited.

III. Drawings Objection

The objection to the drawings because a "B doesn't appear in Fig. 6 as described" is noted. The description is amended and now recite that "... the outer diameter B which is shown in FIG. 6A ...". "FIG. 6" is changed to -- FIG. 6A --.

Further, the Examiner objects to the drawings because they are not numbered separately is noted. A new sheet showing Figs 2A and 2B separately numbered is attached.

IV. Claim Rejection - 35 U.S.C. §103

The rejection of claims 1-5 under 35 U.S.C. §103 (a) as being unpatentable over the combined disclosures of Daiwa JP '333, Takeuchi JP/416 and Dakara, JPI Journal Vol. 38 No. 9, all cited by applicants, is traversed

The present invention according to the amended Claim 1 is a bottle can member which is made of metal in a cylindrical shape with a bottom section and has a thread section on a mouth section wherein: an outer diameter of the thread section which is formed on the mouth section is 28 to 38 mm; a thickness of the thread section is 0.25 to 0.4 mm; an effective thread number of the thread section is 2.0 to 2.5; and a height "h" from a starting point of the thread in the thread section to an upper end surface of the mouth section is set to be in a range of $0.7 \leq (D1-D2)/h \leq 1.3$ under the condition that D1 indicates an outer diameter of the thread and D2 indicates an outer

diameter of a curl section. Thus, the bottle can member according to amended Claim 1 has a large opening and is formed from thin material in which the effective thread number of the thread section is larger than that of a conventional bottle can member and the height "h" which was not considered in the conventional bottle can member is set appropriately. Accordingly, with the disclosed invention the sealing performance is improved.

(1) Regarding "side sealing structure"

When a cap is put on the mouth section of the bottle can member according to the present invention, as shown in FIG. 3, the pressure block 35 compresses the outer periphery of the ceiling plate 22 (hereinafter, "a shoulder") of the cap member 21; and at the same time, the RO roller 32 forms the thread section. Therefore, as shown in FIG. 4, since the outer periphery of the ceiling plate 22 of the cap member 21 is compressed at the outside of the curl section 27 (see Fig. 5 for curl section), the liner 23 inside the cap member 21 is pressed against the curl section 27 from the top toward the outside thereof. Therefore, the bottle can member is sealed by the cap member not only at the top, but also at the side portion.

The side seal structure described above is used to maintain the sealing performance for a bottle can member which can be easily buckled because the wall thickness is small, by applying a pressure force on the outer peripheral surface instead of reducing the vertical load by the pressure block during the cap attachment process.

(2) Regarding the effective thread number

According to the amended Claim 1 of the present invention, since the effective number of threads formed on the mouth section is 2.0 to 2.5, the sealing performance can be improved with reliably forming the thread, as disclosed in the specification, page 12, lines 14 to 25.

(3) Regarding the height "h"

With respect to the cap member, it is important that a tensile force which can maintain the seal of the bottle is effective between the shoulder and the start point of the thread section in the attached cap member. If the cap member is stretched or deformed in this portion, the pressure at the side seal structure will be weakened and sealing performance will be deteriorated. Therefore, it is necessary to prevent the elongation and deformation of the cap member between the shoulder and the thread section.

When the cap member is attached to the bottle can member as described above, a portion (hereinafter, "a cap wall") between the ceiling plate and the female thread section is formed as a gentle arc-shape; and the cap is formed between the cap member and the mouth section of the bottle can member. When the ceiling plate of the cap member is deformed into a dome-shape by the inner pressure of the bottle can member, the cap wall is also deformed so that the curvature thereof becomes small. This deformation can cause the sealing performance at the curl section by the sealing member to deteriorate.

The prior art does not disclose that the pressure force of the sealing member against the curl section for sealing results from the tensile force of the cap wall between the ceiling plate and the female thread section of the cap member.

In the bottle can member according to the present invention, the height "h" from the start point of the thread section to the upper end surface of the mouth section is set to satisfy the formula below, so that the dimension of "h" is smaller than that of the conventional bottle can member.

$$0.7 \leq (D1\text{-}D2)/h \leq 1.3, \text{ that is, } (D1\text{-}D2)/1.3 \leq h \leq (D1\text{-}D2)/0.7$$

As a result, the distance is small between the female thread section and the ceiling plate of the cap member which is to be deformed. Therefore, the tensile force of the cap wall is larger than the inner pressure of the bottle can, so that the adhesion between the curl section of the bottle can member and the sealing member of the cap member can be favorably maintained.

3. Regarding the cited documents

As described above, the present invention according to the amended Claim 1 is a bottle can member in which the mouth section can suppress the deformation of the attached cap member owing to the inner pressure thereby improving the sealing performance. On the other hand, as described below, there is no motivation to set the height "h" in order to prevent the deformation of the cap in the cited documents.

(1) Daiwa (JP'333)

In Daiwa, an edge of a mouth section is rolled in a curl section; and an inclined angle of an inclined wall below the curl section is set. Daiwa discloses that, as a result, the curl section can be improved in appearance and strength; in addition, the inclined wall can be prevented from

buckling. Daiwa discloses a bottle can member having "a top seal structure" in which a ceiling plate of the cap member is pressed against the top edge of the mouth section so as to make a seal. However, the deformation of the cap member owing to the inner pressure is not considered. In addition, the side seal structure is not disclosed or suggested. Therefore, there is no motivation to set the height "h" of the present invention in Daiwa.

(2) Takeuchi (JP'416)

Also in Takeuchi, the deformation of the cap owing to the inner pressure is not considered, and there is no disclosure or suggestion about the side seal structure. Therefore, there is no motivation to set the height "h" of the present invention in Takeuchi.

(3) Dakara (JPI Journal Vol. 38, No. 9)

Dakara discloses a bottle can member and a cap member of the side seal structure in the photograph 2. However, also in this document, it is not disclosed or suggested that the sealing performance can deteriorate owing to deformation of the cap member by the inner pressure, and that the mouth section of the bottle can member can prevent cap deformation. Therefore, there is no motivation to set the height "h" of the present invention in Dakara.

(4) Kao (JP'756)

Kao discloses that the container is made from paper, and the cap is made from Polypropylene. Also in Kao, deformation of the cap by the inner pressure is not considered, and the

side seal structure is not disclosed or suggested. Therefore, there is no motivation to set the height "h" of the present invention in Kao.

(5) JP'166

JP'166 discloses a glass bottle to which a metal cap is to be attached. Deformation of the cap by the inner pressure, and the side seal structure is not disclosed or suggested. Therefore, there is no motivation to set the height "h" of the present invention in JP'166.

In summation, amended Claim 1 now positively recites the structure of,

> "A bottle can member which is made of metal in a cylindrical shape with a bottom section comprising:
> a thread section on a mouth section comprising:
> an outer diameter of the thread section which is formed on the mouth section is 28 to 38 mm;
> a thickness of the thread section is 0.25 to 0.4 mm;
> an effective thread number of the thread section is 2.0 to 2.5 ; and
> a height "h" from a starting point of the thread in the thread section to an upper end surface of the mouth section is set to be in a range of $0.7 \leq (D1-D2)/h \leq 1.3$ under the condition that D1 indicates an outer diameter of the thread and D2 indicates an outer diameter of a curl section. (emphasis added).

Clearly, the references cited neither disclose nor suggest the structure now positively recited in claim 1. Therefore, for the reasons noted above, claim 1 avoids the references applied and is considered to be in condition for allowance. Claims 2, 4, 5, 6, 7, 8 and 9 depend from claim 1 and, therefore, are also considered to be in condition for allowance.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

The Examiner is respectfully requested to contact the undersigned at the telephone number indicated below if the Examiner believes any issue can be resolved through either a Supplemental Response or an Examiner's Amendment.

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Respectfully submitted,

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